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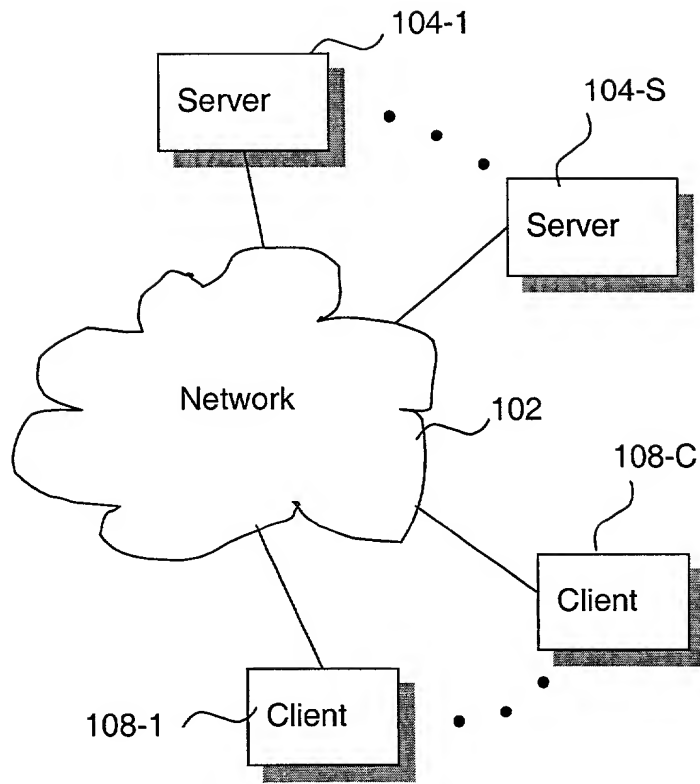


FIG. 1 (Prior Art)

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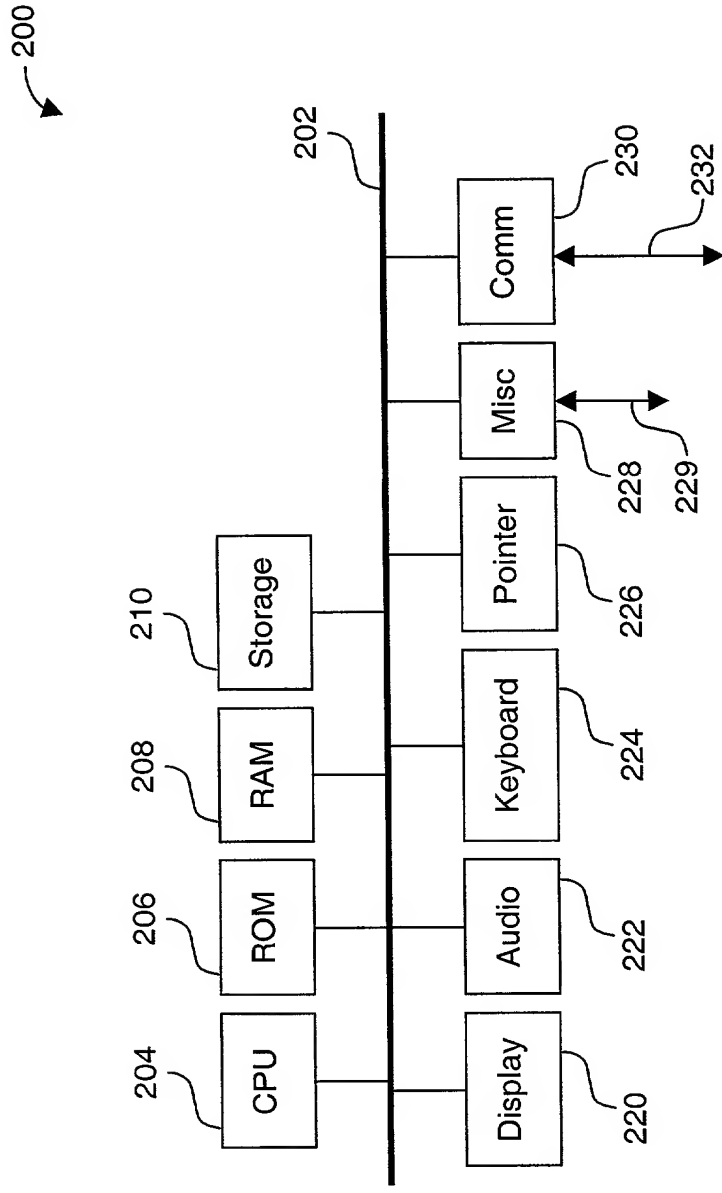


FIG. 2 (Prior Art)

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300

Employee 301

Name302	DOB304	Fitness306
Patrick308	1/1/1	Good
Nancy310	10/10/10	Bad
Bill312	1/2/3	Okay

320

Employee 301

Name302	DOB304	Fitness306	Diet322
Patrick308	1/1/1	Good	Healthy
Nancy310	10/10/10	Bad	Poor
Bill312	1/2/3	Okay	Okay

FIG. 3A (Prior Art)

FIG. 3B (Prior Art)

340

Employee 301

Name302	DOB304	Fitness306	Breakfast342	Lunch344	Dinner346
Patrick308	1/1/1	Good	Healthy	Okay	Poor
Nancy310	10/10/10	Bad	Okay	Healthy	Poor
Bill312	1/2/3	Okay	Okay	Poor	Healthy

FIG. 3C (Prior Art)

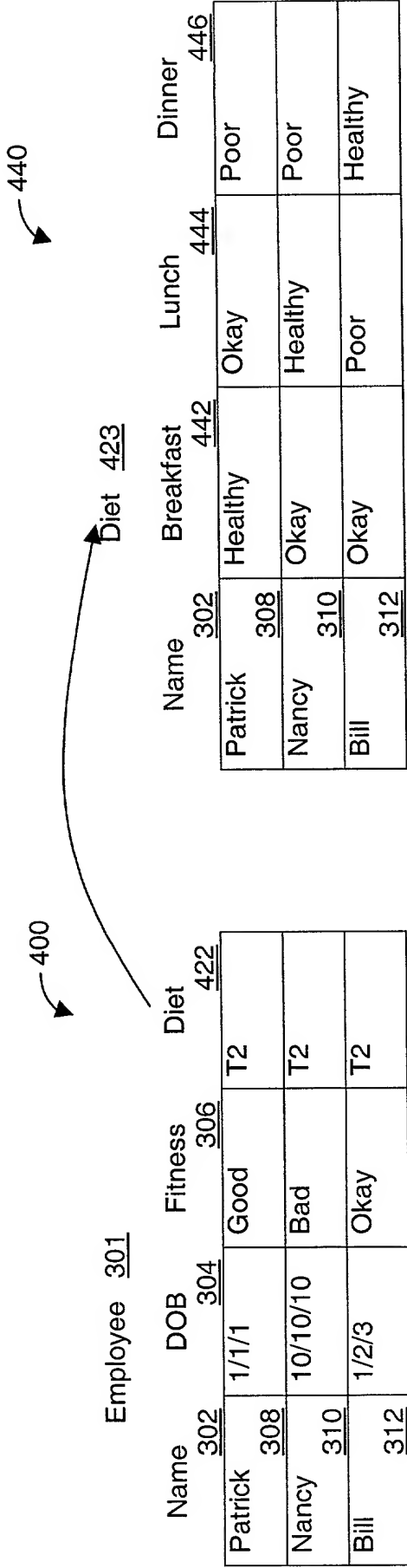


FIG. 4A (Prior Art)

FIG. 4B (Prior Art)

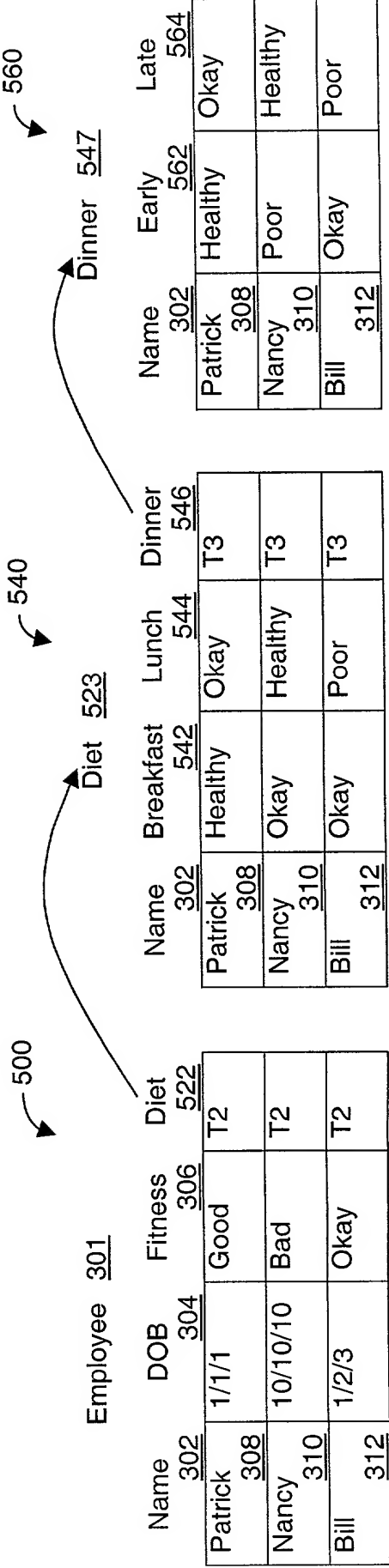


FIG. 5A (Prior Art)

FIG. 5B (Prior Art)

FIG. 5C (Prior Art)

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5/18

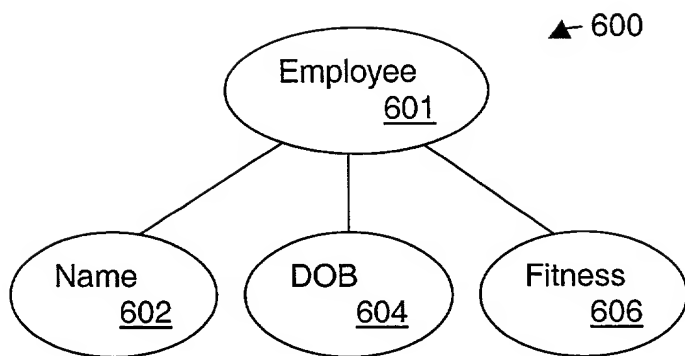


FIG. 6A (Prior Art)

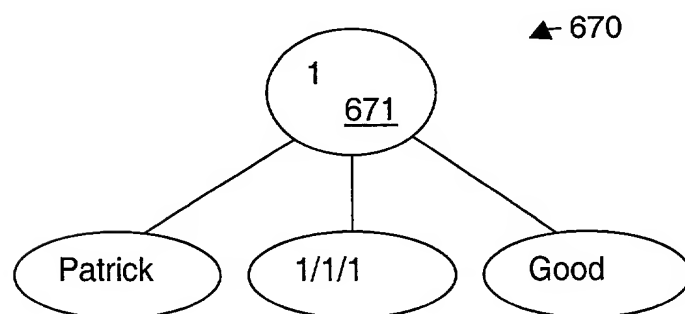


FIG. 6B (Prior Art)

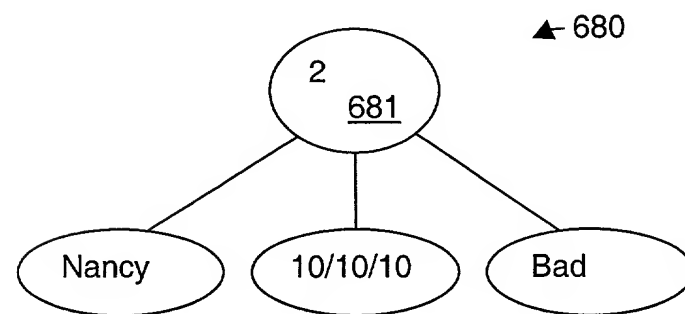


FIG. 6C (Prior Art)

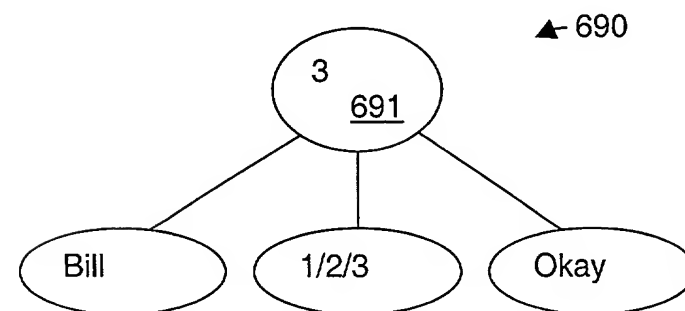


FIG. 6D (Prior Art)

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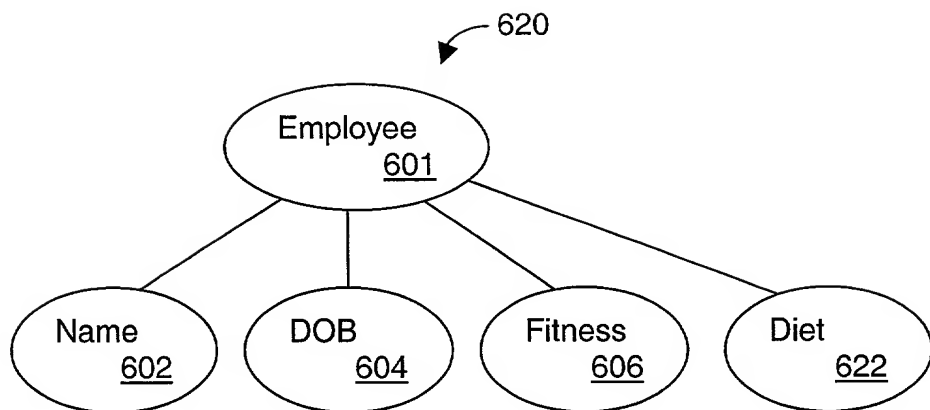


FIG. 6E (Prior Art)

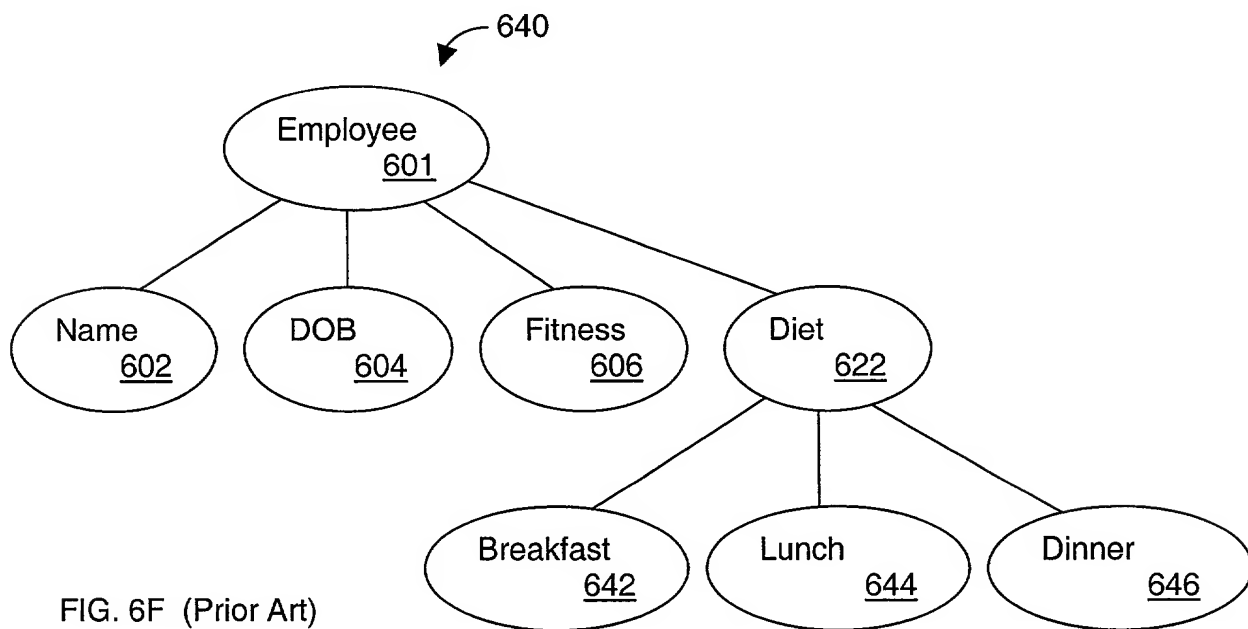


FIG. 6F (Prior Art)

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701 <Employee type = "Manager">
702     <Name> Patrick </Name>
703     <DOB> 1907 </DOB>
704     <Fitness/>
705     <Diet>
706         <Breakfast> Doughnuts </Breakfast>
707         <Lunch> Pizza </Lunch>
708         <Dinner> Beer </Dinner>
709     </Diet>
710 </Employee>
    
```

(File: Patrick.xml)

FIG. 7

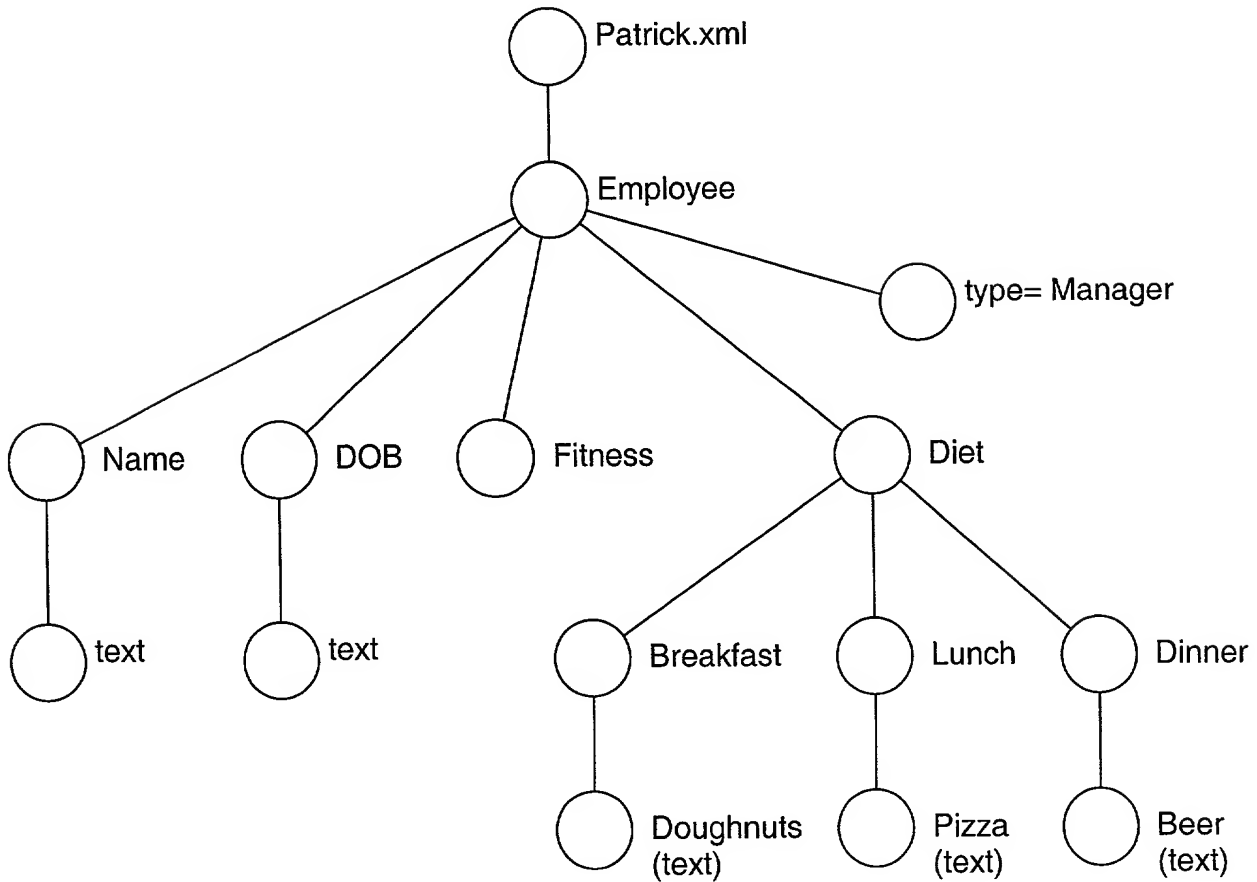


FIG. 8

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8/18

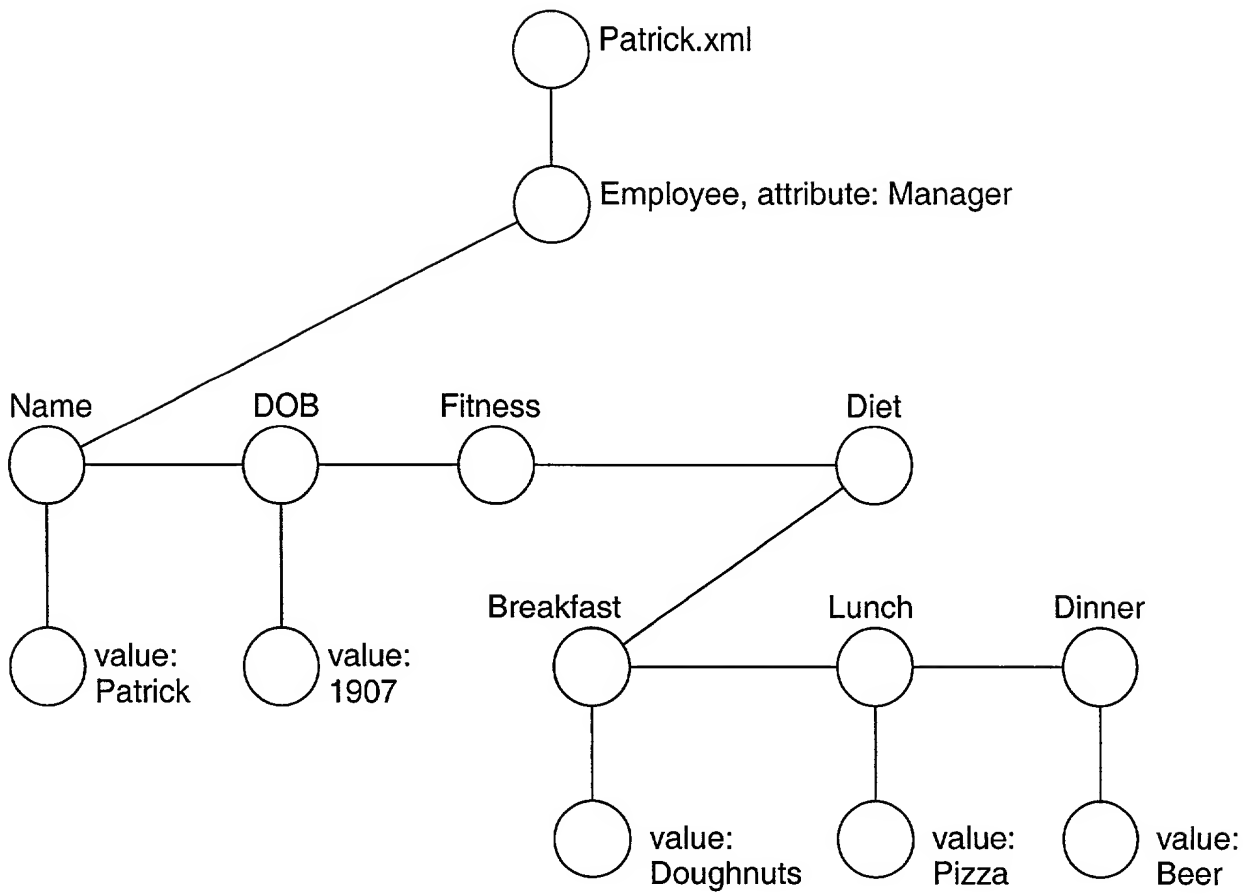


FIG. 9

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[illegible]

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	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	2101	2102	2103	2104	2105	2106	2107	2108	2109	2110	2111	2112	2113	2114	2115	2116	2117	2118	2119	2120	2121	2122	2123	2124	2125	2126	2127	2128	2129	2130	2131	2132	2133	2134	2135	2136	2137	2138	2139	2140	2141	2142	2143	2144	2145	2146	2147	2148	2149	2150	2151	2152	2153	2154	2155	2156	2157	2158	2159	2160	2161	2162	2163	2164	2165	2166	2167	2168	2169	2170	2171	2172	2173	2174	2175	2176	2177	2178	2179	2180	2181	2182	2183	2184	2185	2186	2187	2188	2189	2190	2191	2192	2193	2194	2195	2196	2197	2198	2199	2200	2201	2202	2203	2204	2205	2206	2207	2208	2209	2210	2211	2212	2213	2214	2215	2216	2217	2218	2219	2220	2221	2222	2223	2224	2225	2226	2227	2228	2229	2230	2231	2232	2233	2234	2235	2236	2237	2238	2239	2240	2241	2242	2243	2244	2245	2246	2247	2248	2249	2250	2251	2252	2253	2254	2255	2256	2257	2258	2259	2260	2261	2262	2263	2264	2265	2266	2267	2268	2269	2270	2271	2272	2273	2274	2275	2276	2277	2278	2279	2280	2281	2282	2283	2284	2285	2286	2287	2288	2289	2290	2291	2292	2293	2294	2295	2296	2297	2298	2299	2300	2301	2302	2303	2304	2305	2306	2307	2308	2309	2310	2311	2312	2313	2314	2315	2316	2317	2318	2319	2320	2321	2322	2323	2324	2325	2326	2327	2328	2329	2330	2331	2332	2333	2334	2335	2336	2337	2338	2339	2340	2341	2342	2343	2344	2345	2346	2347	2348	2349	2350	2351	2352	2353	2354	2355	2356	2357	2358	2359	2360	2361	2362	2363	2364	2365	2366	2367	2368	2369	2370	2371	2372	2373	2374	2375	2376	2377	2378	2379	2380	2381	2382	2383	2384	2385	2386	2387	2388	2389	2390	2391	2392	2393	2394	2395	2396	2397	2398	2399	2400	2401	2402	2403	2404	2405	2406	2407	2408	2409	2410	2411	2412	2413	2414	2415	2416	2417	2418	2419	2420	2421	2422	2423	2424	2425	2426	2427	2428	2429	2430	2431	2432	2433	2434	2435	2436	2437	2438	2439	2440	2441	2442	2
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1100

1180

T2	Node ID	child ID
1181	Patrick.xml	Employee
1182	Employee	Name
1183	Employee	Diet
1184	Employee	DOB
1185	Employee	Fitness
1186	Diet	Breakfast
1187	Diet	Dinner
1188	Diet	Lunch

FIG. 11B

1190

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1200

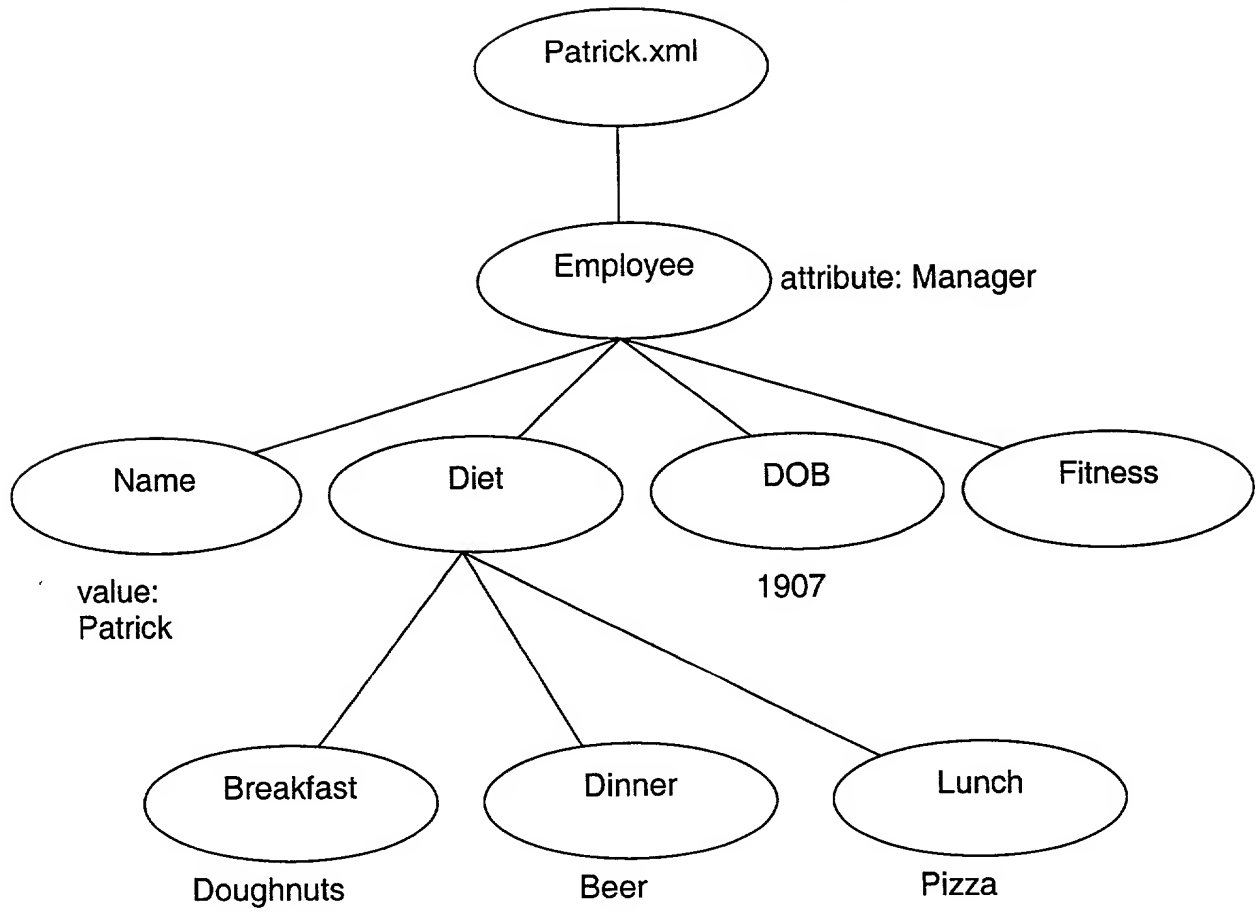


FIG. 12

1300

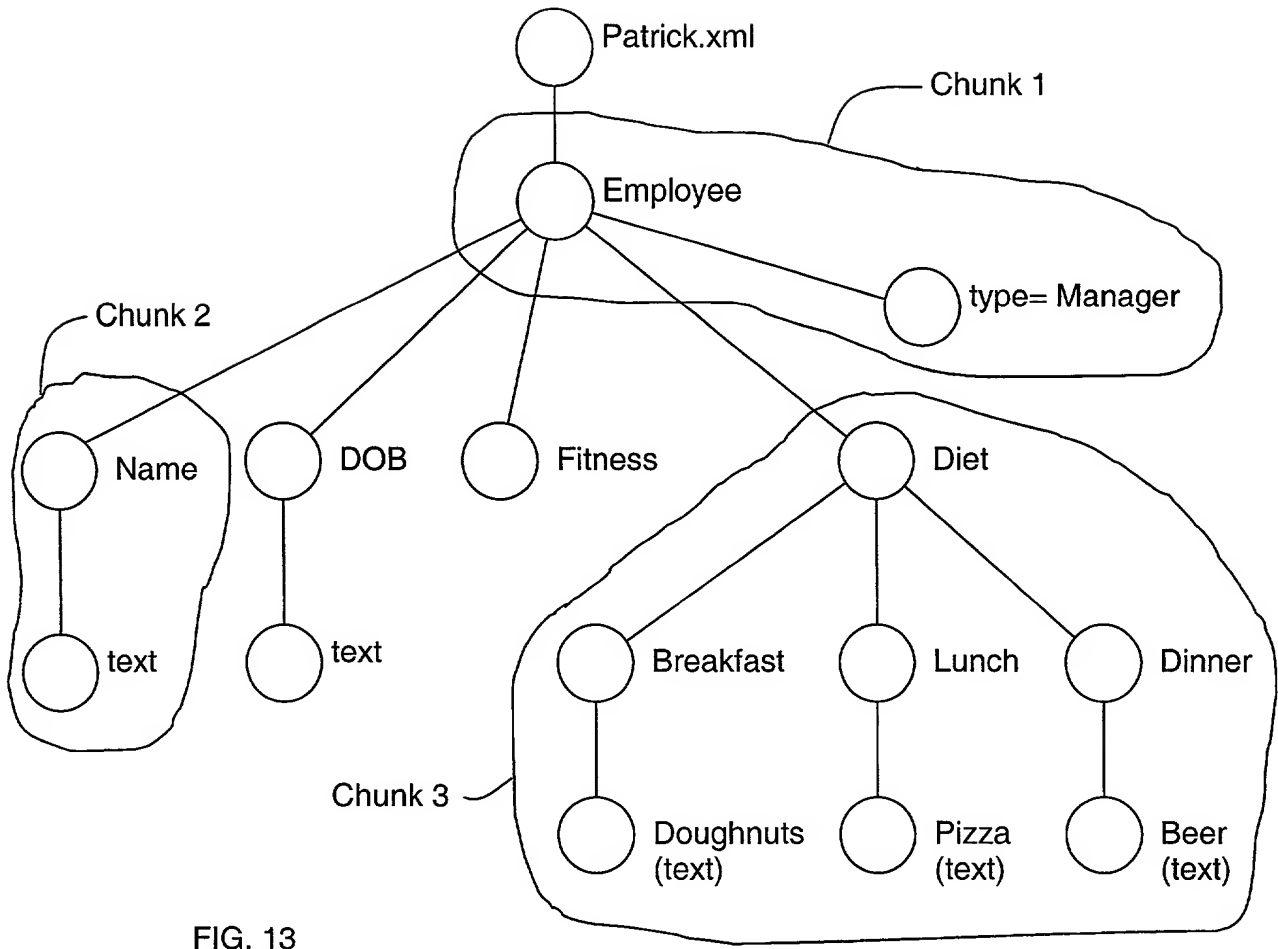


FIG. 13

T1	Node ID	attribute	tag value	parent	child
1401	Patrick.xml				Chunk 1
1402	Chunk 1			Patrick.xml	T2
1403	DOB		1907	Chunk 1	
1404	Fitness			Chunk 1	

FIG. 14A

T2	Node ID	child ID
1481	Chunk 1	Chunk 2
1482	Chunk 1	DOB
1483	Chunk 1	Chunk 3
1484	Chunk 1	Fitness
1485	Diet	Breakfast
1486	Diet	Dinner
1487	Diet	Lunch

FIG. 14B

Chunk 1	Node ID	attribute
1421	Employee	Manager

FIG. 14C

Chunk 2	Node ID	value
1431	Name	Patrick

FIG. 14D

Chunk 3	Node ID	attribute	tag value	parent	child
1441	Diet			Chunk 1	T2
1442	Lunch		Pizza	Diet	
1443	Dinner		Beer	Diet	
1444	Breakfast		Doughnuts	Diet	

FIG. 14E

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1500

object	field	key	type	nulls	comment
document	document_id	pk	number	no	
	url		string	no	
	text_content		clob		supports limited text search
	binary_content		blob		doesn't need to be re-parsed

FIG. 15

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object	field	key	type	nulls	comment
document	document_id	pk	number	no	
	url		string	no	
node	document_id	fk; pk1:1	number	no	cascading delete
	preorder_position	pk1:2	number	no	
	owner_position		number		parent's position
	class_id	fk; ie	number	no	
	search_path	ie	string	no	e.g. "ns1:tag1/ns2:tag2/..."
	value		string		
	blob_value		blob		
	child_document_id	fk	number		used when linking to a child document
class	class_id	pk	number	no	
	node_type		number	no	Node.ELEMENT_NODE, etc.
	local_name	ie; ie1:2	string		
	namespace_id	fk; ie1:1	number		
	prefix		string		
namespace	namespace_id	pk	number	no	
	namespace_uri	ak	string	no	

FIG. 16

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1700

object	field	key	type	nulls	comment
node	node_id	pk	number	no	
	owner_edge_id	fk	number	no	cascading delete
	class_id	fk; ie	number	no	
	first_attribute_edge_id	fk	number		
	first_child_edge_id	fk	number		
	value		string		
	blob_value		blob		
edge	edge_id	pk	number	no	
	parent_node_id	fk	number	no	cascading delete
	child_node_id	fk; ie	number	no	
	next_edge_id	fk	number		
	previous_edge_id	fk	number	no	
class	class_id	pk	number	no	
	node_type		number	no	Node.ELEMENT_NODE, etc.
	local_name	ie; ie1:2	string		
	namespace_id	fk; ie1:1	number		
	prefix		string		
namespace	namespace_id	pk	number	no	
	namespace_uri	ak	string	no	

FIG. 17

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1800

object	field	key	type	nulls	comment
attribute_type	edge_id		number	no	globally unique id
	class_id	fk	number	no	
	value		string		
child_type	edge_id		number	no	globally unique id
	node_id	fk	number	no	
	link_id	fk	number		
node	node_id	pk	number	no	
	owner_node_id	fk	number	no	cascading delete
	owner_edge_id		number	no	
	class_id	fk; ie	number	no	
	attributes		array		array of attribute_type objects
	children		array		array of child_type objects
	value		string		
	blob_value		blob		
link	edge_id	pk	number	no	
	parent_node_id	fk	number		cascading delete
	child_node_id	fk; ie	number		
class	class_id	pk	number	no	
	node_type		number	no	Node.ELEMENT_NODE, etc.
	local_name	ie; ie1:2	string		
	namespace_id	fk; ie1:1	number		
	prefix		string		
namespace	namespace_id	pk	number	no	
	namespace_uri	ak	string	no	

FIG. 18

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18/18

1900

object	field	key	type	nulls	comment
member_type	edge_id		number	no	globally unique id
	class_id	fk; ie	number		
	attribute_count		number		
	child_count		number		
	value		string		
	child_chunk_id	fk	number		used when linking to a child chunk
chunk	chunk_id	pk	number	no	
	owner_chunk_id	fk	number	no	cascading delete
	owner_edge_id		number	no	
	root_class_id	fk; ie	number	no	
	members		array		array of member_type objects
	blob_value		blob		
link	edge_id	pk	number	no	
	parent_chunk_id	fk	number		cascading delete
	child_chunk_id	fk; ie	number		
class	class_id	pk	number	no	
	node_type		number	no	Node.ELEMENT_NODE, etc.
	local_name	ie; ie1:2	string		
	namespace_id	fk; ie1:1	number		
	prefix		string		
namespace	namespace_id	pk	number	no	
	namespace_uri	ak	string	no	

FIG. 19

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